Types of Diabetes

Audience: Health Care Providers

General Information

What is diabetes?

Diabetes is a group of diseases marked by high levels of blood glucose resulting from defects in insulin production, insulin action, or both. Diabetes can lead to serious complications and premature death, but people with diabetes can take steps to control the disease and lower the risk of complications.

Types of diabetes

Type 1 diabetes was previously called insulin-dependent diabetes mellitus (IDDM) or juvenile-onset diabetes. Type 1 diabetes develops when the body's immune system destroys pancreatic beta cells, the only cells in the body that make the hormone insulin that regulates blood glucose . To survive, people with type 1 diabetes must have insulin delivered by injection or a pump. This form of diabetes usually strikes children and young adults, although disease onset can occur at any age. Type 1 diabetes accounts for 5% to 10% of all diagnosed cases of diabetes. Risk factors for type 1 diabetes may be autoimmune, genetic, or environmental. There is no known way to prevent type 1 diabetes. Several clinical trials of methods to prevent type 1 diabetes are currently in progress or are being planned.

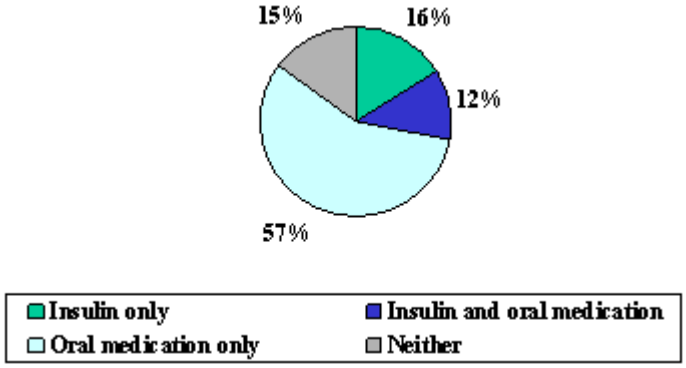
Type 2 diabetes was previously called non–insulin-dependent diabetes mellitus (NIDDM) or adult-onset diabetes. Type 2 diabetes accounts for about 90% to 95% of all diagnosed cases of diabetes. It usually begins as insulin resistance, a disorder in which the cells do not use insulin properly. As the need for insulin rises, the pancreas gradually loses its ability to produce it. Type 2 diabetes is associated with older age, obesity, family history of diabetes, history of gestational diabetes, impaired glucose metabolism, physical inactivity, and race/ethnicity. African Americans, Hispanic/Latino Americans, American Indians, and some Asian Americans and Native Hawaiians or Other Pacific Islanders are at particularly high risk for type 2 diabetes and its complications. Clinically-based reports and regional studies suggest that type 2 diabetes in children and adolescents, although still rare, is being diagnosed more frequently, particularly in American Indians, African Americans, and Hispanic/Latino Americans.

Other types of diabetes result from specific genetic conditions (such as maturity-onset diabetes of youth), surgery, drugs, malnutrition, infections, and other illnesses. Such types of diabetes account for 1% to 5% of all diagnosed cases.

Treating diabetes

- To survive, people with type 1 diabetes must have insulin delivered by injection or a pump.
- Many people with type 2 diabetes can control their blood glucose by following a healthy meal plan and exercise program, losing excess weight, and taking oral medication.
- Many people with diabetes also need to take medications to control their cholesterol and blood pressure.
- Diabetes self-management education (DMSE) is an integral component of medical care.
- Among adults with diagnosed diabetes, 16% take insulin only, 12% take both insulin and oral medication, 57% take oral medication only, and 15% do not take either insulin or oral medications.

Treatment with insulin or oral medications among adults with diagnosed diabetes—United States, 2001–2003



Source: 2001–2003 National Health Interview Survey

Detailed information about this graph is available.

Prediabetes: Impaired glucose tolerance and impaired fasting glucose

- Prediabetes is a condition that raises the risk of developing type 2 diabetes, heart disease, and stroke. People with prediabetes have blood glucose levels higher than normal but not high enough to be classified as diabetes.
- People with prediabetes have impaired fasting glucose (IFG) or impaired glucose tolerance (IGT). Some people have both IFG and IGT.

- IFG is a condition in which the fasting blood sugar level is 100 to 125 milligrams per deciliter (mg/dL) after an overnight fast. The level is higher than normal but not high enough to be classified as diabetes.
- IGT is a condition in which the blood sugar level is 140 to 199 mg/dL after a 2-hour oral glucose tolerance test. This level is higher than normal but not high enough to be classified as diabetes.
- More recent estimates from 1999 through 2002 indicate that among U.S. adults aged 20 years and older, 26% had IFG, which was similar to the prevalence in 1988–1994 (25%). Applying this percentage to the entire U.S. population yields an estimated 54 million American adults with IFG in 2002. Because IGT was not measured in 1999–2002, these data suggest that at least 54 million American adults had prediabetes in 2002.
- Progression to diabetes among those with prediabetes is not inevitable. Studies have shown that people with prediabetes who lose weight and increase their physical activity can prevent or delay diabetes and even return their blood glucose levels to normal.

Additional information and resources:

DC Health Resources Partnership
http://dchrp.org/

Medline Plus
http://medlineplus.gov/

Centers for Disease Control (CDC)
http://www.cdc.gov/

National Institutes of Health
http://www.nih.gov